

REMARKS

This is in response to the Office Action dated September 23, 2009. In view of the foregoing amendments and following representations, reconsideration is respectfully requested.

By the above amendments, claims 10-23 have been cancelled and replaced with new claims 24-38. Thus, claims 24-38 are currently pending in the present application.

1. Drawing Objection

On page 2 of the Office Action, the Examiner indicates that the drawing should be amended to clearly show the liquids. Accordingly, Fig. 1 has been amended to provide the chambers with cross hatching to clearly show the liquids. A replacement drawing sheet for Fig. 1 is submitted herewith.

2. Amendments to the Specification and Abstract

The specification and abstract have been reviewed and revised in order to make a number of minor clarifying and other editorial amendments. Due to the nature of the revision involved, a substitute specification and abstract has been prepared. No new matter has been added. Also enclosed is a "marked-up" copy of the original specification and abstract to show the changes that have been incorporated into the substitute specification and abstract. The enclosed copy is entitled "Version with Markings to Show Changes Made."

Also, in response to the Examiner's objection, the title of the invention has been amended to more clearly indicate the invention to which the claims are directed.

3. Rejection of the Claims under 35 U.S.C. 112

On pages 4-5 of the Office Action, claims 10-23 are rejected under 35 U.S.C. 112, second paragraph. In response, claims 10-23 have been replaced with new claims 24-38. Each of the new claims has been drafted to overcome the objections set forth in items 4-7 of the Office Action and to overcome the rejections set forth in item 9 of the Office Action. In particular, independent method claims 24 and 38 have been drafted to positively recite steps of the novel method. Also, the term "necessary" has not been used with the force recited in the new claims. It is submitted that the rejection of claims 10-23 is now obviated in view of the cancellation of these claims and the presentation of the new claims.

Note, with respect to claim 28, the language and/or has been maintained because this language is definite. One skilled in the art would easily understand what is being claimed in claim 28.

4. Rejection of Claims under 35 U.S.C. 102(b) and 35 U.S.C. 103(a)

On pages 5-7 of the Office Action, claims 10, 12, 13 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kryuchkov (SU 969958). Also, on pages 7-8 of the Office Action, claims 11, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Kryuchkov reference. It is submitted that the present invention, as defined in the new claims, now clearly distinguishes over the Kryuchkov reference for the following reasons.

Kryuchkov (SU 969958) discloses a positive displacement pump, for actively pumping a solution from a source. The pump is driven by solar energy used to evaporate a solvent and create chambers with high and low concentrations. The chambers, with different concentrations,

are placed over ground and away from the fluid to be pumped. The pump is driven by utilizing the osmotic pressure between the two solutions formed with this closed system.

The present invention, as defined in claims 24 and 38, is directed to a method for operating an actuator, and requires placing the osmotic cell in a fluid flow, utilizing the osmotic pressure difference between the solution in the cell and the external fluid flow. The claimed method is clearly not disclosed in the Kryuchkov reference, and thus it is submitted that method defined in claim 24 and claim 38 is clearly allowable over the prior art of record.

Further, on pages 7-8 of the Office Action, the Examiner takes the position that claims 11, 14 and 18 are obvious over the teachings of the Kryuchkov reference. However, as discussed above, the amended claims clearly distinguish over the Kryuchkov reference. In particular, in the present invention, the osmotic cell is placed in the fluid flow thereby utilizing the osmotic pressure difference between the solution in the cell and an external fluid. However, in the Kryuchkov reference the main operating principle is to create two solutions with an osmotic pressure difference by evaporating the solvent using solar energy and utilizing the pressure difference in a displacement pump. Thus, the method of the present invention, as defined in claims 24 and 38, and the method disclosed in Kryuchkov are fundamentally different.

Further, independent claim 28 is directed to an actuator device including an osmotic cell provided with a solution, wherein the osmotic cell is designed to be placed in an external fluid flow or fluid reservoir such that force and motion of the actuator device are achieved for driving or adjusting a valve or inflow control device by utilizing an osmotic pressure difference between the solution in the osmotic cell and the external fluid flow or fluid reservoir in relation to the osmotic cell. As discussed above, Kryuchkov discloses a positive displacement pump, and thus does not disclose or suggest the actuator set forth in claim 28.

Further, in item 15 of the Office Action, the Examiner indicates that Hinkel et al. (U.S. Patent No. 6,069,118) discloses "an osmotic device (Figure 5) used in connection with a wellbore operation." However, the Hinkel patent relates to fractures in a formation and a method of creating fluid flow from the fracture and into the formation by exploiting a chemical potential gradient at the fracture face. The Hinkel method involves the creation of a membrane. Clearly, the Hinkel patent does not disclose utilizing an osmotic cell placed in the fluid flow to control an actuator.

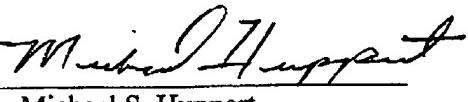
Dependent claims 25-27 and 29-37 depend, directly or indirectly, from one of the allowable independent claims, and are therefore allowable at least by virtue of their dependencies.

In view of the above, it is submitted that the present application is now clearly in condition for allowance. The Examiner therefore is requested to pass this case to issue.

In the event that the Examiner has any comments or suggestions of a nature necessary to place this case in condition for allowance, then the Examiner is requested to contact Applicant's undersigned attorney by telephone to promptly resolve any remaining matters.

Respectfully submitted,

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December 23, 2009